AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application:

LISTING OF THE CLAIMS

1. (currently amended) A compound having the formula $L^1[MQ^1Q^2]L^2$ in which M is a metal selected from the group consisting of Nb, Ta, Mo, W, Mn and Re, Q^1 and Q^2 are each a univalent, and L^1 and L^2 are ligands coordinated to M, wherein ~~each~~ one of L^1 and L^2 contains a first coordinating atom that is a nitrogen atom contained within a C=N group, and a second coordinating atom that is either a second nitrogen atom, optionally present in a second C=N group, or an oxygen, sulfur or phosphorus atom, and the other of L^1 and L^2 contains a first coordinating atom that is a nitrogen atom contained within a C=N group, and a second coordinating atom that is either a second nitrogen atom, optionally present in a second C=N group, or a sulfur or phosphorus atom.

2. (original) The compound of claim 1, wherein, in each of L^1 and L^2, the second coordinating atom is a second nitrogen atom.

3. (original) The compound of claim 2, wherein, in each of L^1 and L^2, the second nitrogen atom is present in a second C=N group.

4. (original) The compound of claim 3, wherein L^1 and L^2 are identical.

5. (original) The compound of claim 4, wherein the first nitrogen atom in each of L^1 and L^2 is bound to a first substituent R_S, and the second nitrogen atom in each of L^1 and L^2 is bound to a second substituent R_L, wherein the difference in steric bulk between R_S and R_L is sufficient to result in isospecificity when the compound is used as a polymerization catalyst.

6. (original) The compound of claim 3, wherein L^1 and L^2 are different.

7. (original) The compound of claim 6, wherein the first and second nitrogen atoms in the ligand L^1 are bound to a first substituent R_S, and the first and second nitrogen atoms in the ligand L^2 are bound to a second substituent R_L, wherein the difference in steric bulk between R_S and R_L is sufficient to result in syndiospecificity when the compound is used as a polymerization catalyst.

8. (original) The compound of claim 1, wherein the compound has a positive charge +y and is associated with y/z anions each bearing a negative charge -z.

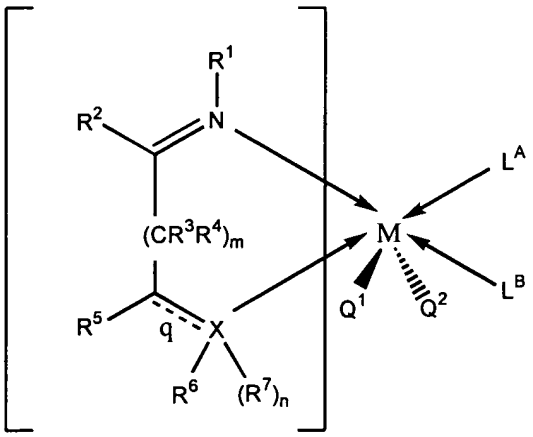
9. (original) The compound of claim 8, wherein y and z are independently integers in the range of 1 to 4 inclusive.

10. (original) The compound of claim 9, wherein y and z are independently 1 or 2.

11. (original) The compound of claim 8, wherein the anions are selected from the group consisting of halide and pseudohalide.

12. (currently amended) A compound having the structure of formula (I)

(I)



L^1

wherein:

M is a metal selected from the group consisting of Groups VA, VIA and VIIA of the periodic table of the elements;

Q^1 and Q^2 are independently selected from the group consisting of hydrido, halide, alkoxy, amido, unsubstituted C_1-C_{30} hydrocarbyl, C_1-C_{30} hydrocarbyl substituted with one or more substituents, and C_1-C_{30} hydrocarbyl-substituted Group IVB elements, or Q^1 and Q^2 ~~may~~ together form an alkylidene olefin, acetylene, or a five- or six-membered cyclic hydrocarbyl group;

m and n are independently zero or 1;

q is an optional double bond;

X is N, O, S or P, with the provisos that (a) when X is N or P, then either n is 1 or q is present as a double bond, but not both, and (b) when X is O or S, then n is zero and q is absent;

R^1, R^6, and R^7 are independently hydrido, hydrocarbyl or substituted hydrocarbyl, and R^2 and R^5 are independently hydrido, halo, hydrocarbyl or substituted hydrocarbyl, or R^1 and R^2 and/or R^5 and R^6 ~~may be taken~~ together ~~to~~ form a linkage -Q-, resulting in a five- or six-membered ring, wherein Q is $-[(CR)_a(Z)_b]-$ in which a is 2, 3 or 4, Z is N, O or S, b is zero or 1, the sum of a and b is 3 or 4, and R is selected from the group consisting of hydrido, halo, hydrocarbyl, hydrocarbyloxy, trialkylsilyl, NR^8_2, OR^9, and NO_2, wherein R^8 and R^9 are each independently hydrocarbyl, or wherein R moieties on adjacent carbon atoms ~~may be~~ are linked to form an additional five- or six-membered ring, or R^2 and R^5 ~~may~~ together form a linkage -Q- as just defined;

R^3 and R^4 are independently selected from the group consisting of hydrido and hydrocarbyl, or at least one of R^3 and R^4 ~~may be~~ is bound through a lower alkylene linkage to an atom contained within L^A or L^B;

L^A and L^B are ligands which ~~may be~~ are the same or different and are independently selected from the group consisting of nitrogen-containing, sulfur-containing and oxygen-containing heterocycles, tertiary amines and phosphines, or L^A and L^B ~~may~~ together form a single bidentate ligand that ~~may or may~~ is or is not ~~be~~ the same as L^1,

with the proviso that when ~~(a)~~ L^A and L^B form a single bidentate ligand that is identical to L^1 and M is V or Cr, then either (b) R^1 and R^2 or R^5 and R^6 ~~are taken~~ together ~~to~~ form a linkage -Q- as defined above, or (c) X is other than N, or both (b) and (c).

13. (original) The compound of claim 12, wherein the compound has a positive charge +y and is associated with y/z anions each bearing a negative charge -z.

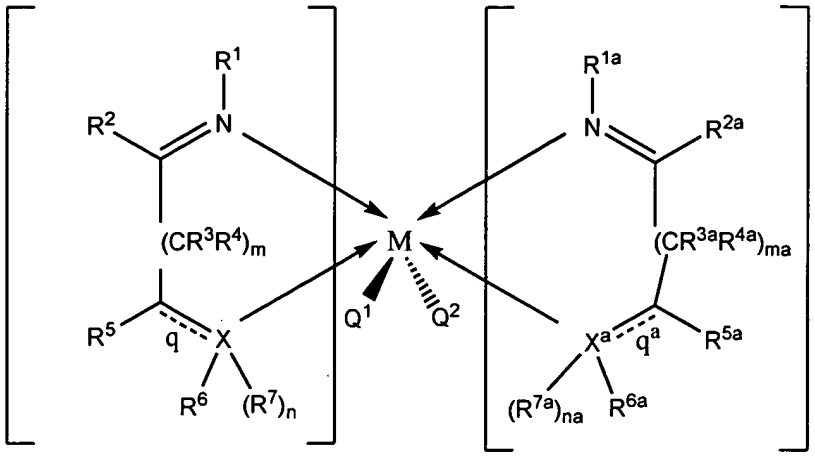
14. (original) The compound of claim 13, wherein y and z are independently integers in the range of 1 to 4 inclusive.

15. (original) The compound of claim 14, wherein y and z are independently 1 or 2.

16. (previously presented) The compound of claim 13, wherein the anions are selected from the group consisting of halide and pseudohalide.

17. (previously presented) The compound of claim 12, having the structure of formula (II)

(II)



L^1 L^2

wherein, q^a, ma, na, and R^{1a} through R^{7a} are defined as for q, m, n and R^1 through R^7, respectively.

18. (original) The compound of claim 17, wherein the compound has a positive charge +y and is associated with y/z anions each bearing a negative charge -z.

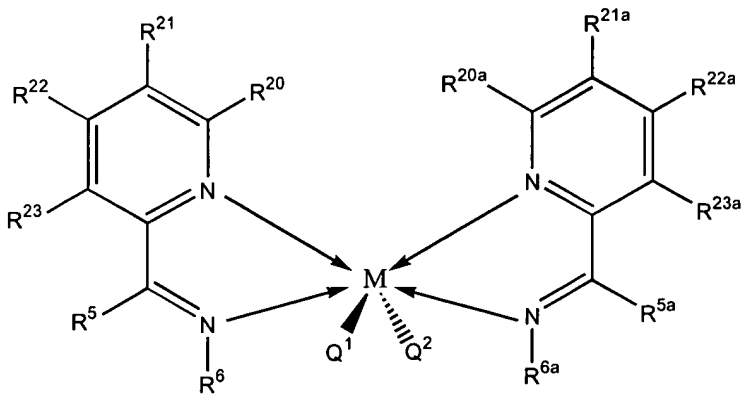
19. (original) The compound of claim 18, wherein y and z are independently integers in the range of 1 to 4 inclusive.

20. (original) The compound of claim 19, wherein y and z are independently 1 or 2.

21. (previously presented) The compound of claim 18, wherein the anions are selected from the group consisting of halide and pseudohalide.

22. (original) The compound of claim 17, having the structure of formula (V)

(V)



wherein:

R^{20}, R^{20a}, R^{21}, R^{21a}, R^{22}, R^{22a}, R^{23} and R^{23a} are hydrido or hydrocarbyl of 1 to 10 carbon atoms, or any two adjacent R^{20}, R^{20a}, R^{21}, R^{21a}, R^{22}, R^{22a}, R^{23} and R^{23a} groups may be linked to form a five- or six-membered aromatic ring.

23. (original) The compound of claim 22, wherein R^{20}, R^{20a}, R^{21}, R^{21a}, R^{22}, R^{22a}, R^{23} and R^{23a} are hydrido.

24. (original) The compound of claim 22, wherein R^{20} and R^{20a} are methyl, and R^{21}, R^{21a}, R^{22}, R^{22a}, R^{23} and R^{23a} are hydrido.

25. (currently amended) The compound of ~~any one of claims 21,~~ either claim 22 or 23, wherein the compound has a positive charge +y and is associated with y/z anions each bearing a negative charge -z.

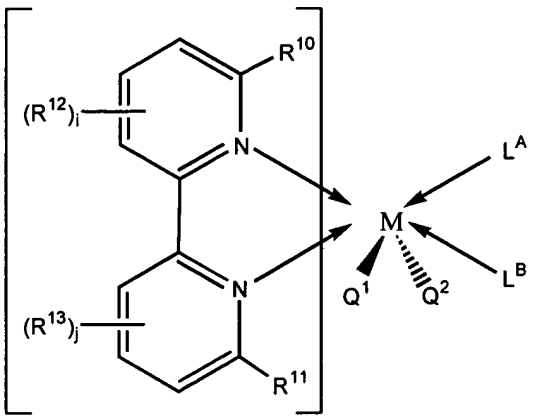
26. (original) The compound of claim 25, wherein y and z are independently integers in the range of 1 to 4 inclusive.

27. (original) The compound of claim 26, wherein y and z are independently 1 or 2.

28. (original) The compound of claim 25, wherein the anions are selected from the group consisting of halide and pseudohalide.

29. (currently amended) A compound having the structure of formula (III)

(III)



L^3

wherein:

M is a metal selected from the group consisting of Groups VA, VIA and VIIA of the periodic table of the elements;

Q^1 and Q^2 are independently selected from the group consisting of hydrido, halide, alkoxy, amido, unsubstituted C_1-C_{30} hydrocarbyl, C_1-C_{30} hydrocarbyl substituted with one or more substituents, and C_1-C_{30} hydrocarbyl-substituted Group IVB elements, or Q^1 and Q^2 ~~may~~ together form an alkylidene olefin, acetylene, or a five- or six-membered cyclic hydrocarbyl group;

L^A and L^B are ligands which ~~may be~~ are the same or different and are independently selected from the group consisting of nitrogen-containing, sulfur-containing and oxygen-containing heterocycles, tertiary amines and phosphines, or L^A and L^B ~~may~~ together form a single bidentate ligand that ~~may or may~~ is or is not ~~be~~ the same as L^3;

i and j are independently zero, 1, 2 or 3; and

R^{10}, R^{11}, R^{12} and R^{13} are independently hydrido, hydrocarbyl or substituted hydrocarbyl.

Claims 30-51 (canceled).

52. (currently amended) The compound of claim 12, wherein Q^1 and Q^2 are independently selected from the group consisting of hydrido, halide, alkoxy, amido, unsubstituted C_1-C_{30} hydrocarbyl, C_1-C_{30} hydrocarbyl substituted with one or more electron-withdrawing groups, and C_1-C_{30} hydrocarbyl-substituted Group IVB elements, or Q^1 and Q^2 ~~may~~ together form an alkylidene olefin, acetylene, or a five- or six-membered cyclic hydrocarbyl group.

53. (currently amended) The compound of claim 29, wherein Q^1 and Q^2 are independently selected from the group consisting of hydrido, halide, alkoxy, amido, unsubstituted C_1-C_{30} hydrocarbyl, C_1-C_{30} hydrocarbyl substituted with one or more electron-withdrawing groups, and C_1-C_{30} hydrocarbyl-substituted Group IVB elements, or Q^1 and Q^2 ~~may~~ together form an alkylidene olefin, acetylene, or a five- or six-membered cyclic hydrocarbyl group.

Claim 54 (canceled).